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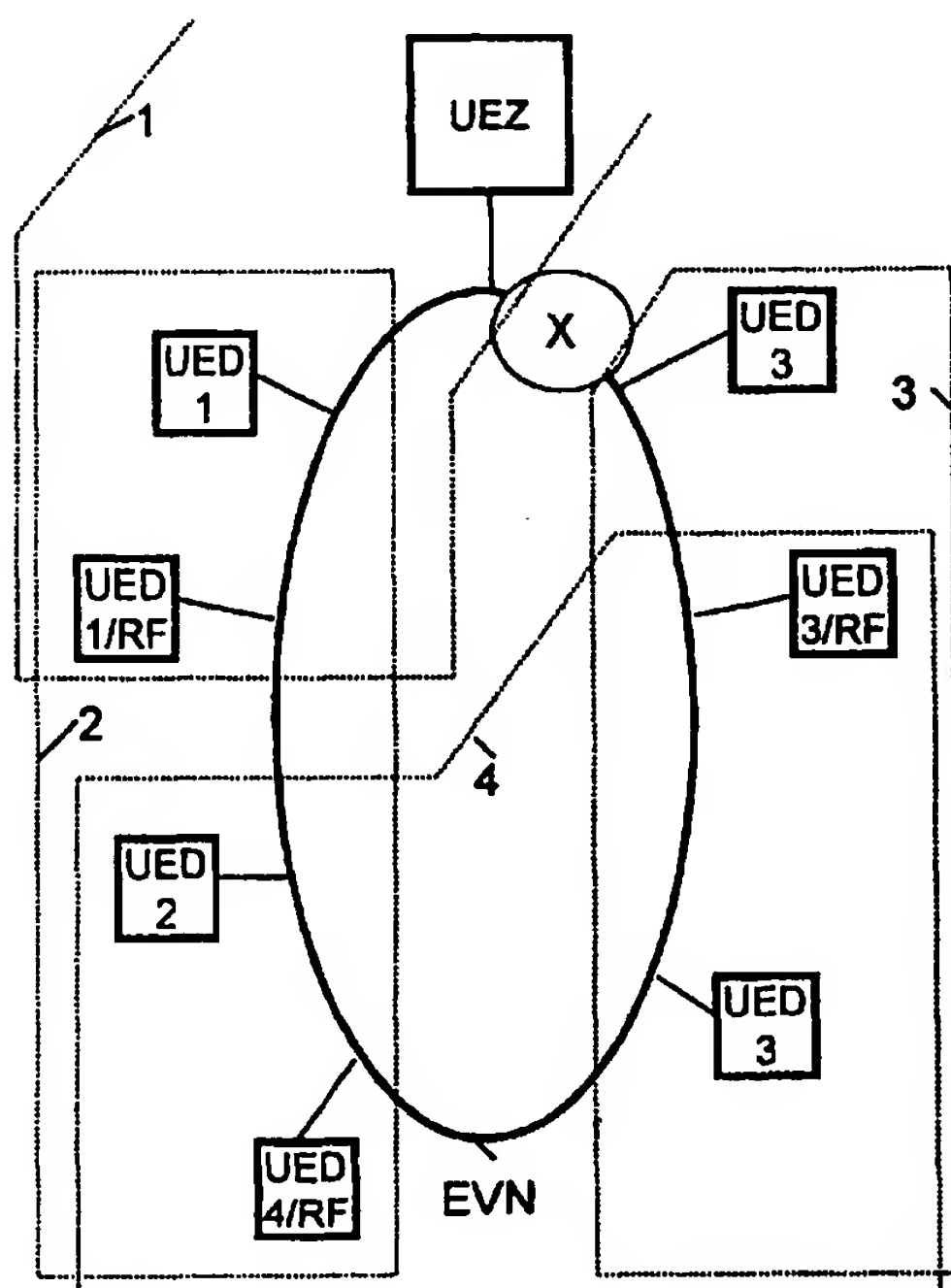
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- (51) Internationale Patentklassifikation⁷: **H04B 3/54** (71) Anmelder (für alle Bestimmungsstaaten mit Ausnahme von US): **SIEMENS AKTIENGESELLSCHAFT** [DE/DE]; Wittelsbacherplatz 2, 80333 München (DE).
- (21) Internationales Aktenzeichen: PCT/DE02/03536
- (22) Internationales Anmeldedatum: 20. September 2002 (20.09.2002) (72) Erfinder; und (75) Erfinder/Anmelder (nur für US): **SIEBERT, Harry** [DE/DE]; Egenhoferstr. 65, 82178 Puchheim (DE). **RUHNKE, Helko** [DE/DE]; Allescherstr. 27, 81479 München (DE).
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(54) Title: METHOD FOR OPERATING A TRANSMISSION SYSTEM AND TRANSMISSION SYSTEM IN AN ENERGY SUPPLY NETWORK

(54) Bezeichnung: VERFAHREN ZUM BETREIBEN EINES ÜBERTRAGUNGSSYSTEMS UND ÜBERTRAGUNGSSYSTEM IN EINEM ENERGIEVERSORGUNGSNETZ



(57) Abstract: At least one central transmission device (UEZ) is connected to remote transmission devices (UED) by means of the energy supply lines of the energy supply network, whereby a remote repeater function (RF) is positioned within the energy supply network (EVN) at an appropriate position in the case of an insufficient transmission range from the central to the remote transmission devices (UEZ, UED). According to the invention, a part of the remote transmission devices (UED) is additionally provided with repeater functions (RF), such that the above may be configured using the central transmission device (UEV) as remote transmission device (UED) and/or as remote transmission device (UED/RF) with repeater function (RF). Thus, when the remote transmission devices (UED) can not be reached, an alternative path is determined and the transmission system automatically reconfigured.

(57) Zusammenfassung: Zumindest eine zentrale Übertragungseinrichtung (UEZ) ist über die Energieversorgungsleitungen des Energieversorgungsnetzes mit dezentralen Übertragungseinrichtungen (UED) verbunden, wobei bei nicht ausreichender Übertragungsbereichweite der zentralen zu dezentralen Übertragungseinrichtungen (UEZ, UED) eine dezentrale Repeaterfunktion (RF) im Energieversorgungsnetz (EVN) entsprechend positioniert ist. Erfindungsgemäß ist ein Teil der dezentralen Übertragungseinrichtungen (UED) zusätzlich mit Repeaterfunktionen (RF) derart ausgestaltet, dass

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— Erfindererklärung (Regel 4.17 Ziffer iv) nur für US

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Erklärungen gemäß Regel 4.17:

— hinsichtlich der Berechtigung des Anmelders, ein Patent zu beantragen und zu erhalten (Regel 4.17 Ziffer ii) für die folgenden Bestimmungsstaaten AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,

Zur Erklärung der Zweibuchstaben-Codes und der anderen Abkürzungen wird auf die Erklärungen ("Guidance Notes on Codes and Abbreviations") am Anfang jeder regulären Ausgabe der PCT-Gazette verwiesen.

sie über die zentrale Übertragungseinrichtung (UEZ) als dezentrale Übertragungseinrichtung (UED) und/oder als dezentrale Übertragungseinrichtung (UED/RF) mit Repeaterfunktion (RF) konfigurierbar sind. Hierdurch kann bei einer Nichterreichbarkeit von dezentralen Übertragungseinrichtungen (UED) ein alternativer Pfad ermittelt und automatisch das Übertragungssystem rekonfiguriert werden.

Claims

1. Method for operating a transmission system in a power supply network (EVN), with at least one centralized transmission facility (UEZ) being connected via the power supply lines of the power supply network (EVN) to decentralized transmission facilities (UED), with a decentralized repeater function (RF) being appropriately positioned in the power supply network (EVN) in the event of an inadequate transmission range of the centralized to decentralized transmission facilities (UEZ, UED),
characterized in that
at least part of the decentralized transmission facilities (UED) is additionally provided with repeater functions (RF) in such a way that they can be configured via the centralized transmission facility (UEZ) as a decentralized transmission facility (UED) and/or as a decentralized transmission facility (UED/RF) with a repeater function (RF).
2. Method in accordance with Claim 1, characterized in that the decentralized transmission facilities (UED) can be configured with the aid of a network management function, realized in the central transmission facility (UEZ) or in the power supply network (EVN) and in the decentralized transmission facilities (UED), with the repeater function (RF) in the decentralized transmission facilities (UED) being configured relative to the network topology of the power supply network (EVN) and the transmission ranges of the decentralized transmission facilities (UED).
3. Method in accordance with Claim 1 or 2, characterized in that
in the event of a decentralized transmission facility (UED) being unreachable, the other decentralized transmission facilities (UED) and their repeater function (RF) are automatically reconfigured with the aid of the network management function and the network topology of the power supply network (EVN) assigned to the network management function in such a way that communication between the

centralized and decentralized transmission facilities (UEZ, UED)
is possible.

4. Method in accordance with Claim 3, characterized in that
5 if one of the decentralized transmission facilities (UED) is
unreachable an alternative path for the communication of
information from the centralized to the unreachable transmission
facility (UEZ, UED) is determined with the aid of the network
management function and that the affected decentralized
10 transmission facilities (UED) are configured with the necessary
repeater functions (RF) appropriate to the alternative determined
path.

5. Method in accordance with one of the preceding claims,
15 characterized in that
during an initialization or reconfiguration as part of the
expansion or reduction of the transmission system via the power
supply lines, with the aid of the network management function and
of the network topology of the power supply network (EVN) assigned
20 to the network management function, the decentralized transmission
facilities (UED) and their repeater functions (RF) are configured
in such a way that the shortest possible transmission path is
achieved.

25 6. Method in accordance with one of the preceding claims,
characterized in that
the transmission system is configured in such a way that if
decentralized transmission facilities (UED) cannot be reached,
part of the decentralized transmission facilities (UED/RF) are
30 provided with a repeater function (RF) and positioned in such a
way that alternative paths to the unreachable transmission
facilities (UED) are determined and the relevant transmission
facilities (UE) can be configured with regard to their repeater
functions (RF) and the transmission facilities (UE) assigned to
35 their range area (1..4).

7. Transmission system in a power supply network (EVN) with at least one centralized transmission facility (UEZ) being connected via the power supply lines of the power supply network to decentralized transmission facilities (UED), with a decentralized
5 repeater function (RF) being appropriately positioned in the power supply network (EVN) in the event of there being insufficient transmission range of the centralized to the decentralized transmission facilities (UEZ, UED), characterized in that
10 at least a part of the decentralized transmission facilities (UED) are additionally provided with repeater functions (RF) so that they are configurable via the centralized transmission facility (UEZ) as a decentralized transmission facility (UED) and/or as a decentralized transmission facility (UED/RF) with a repeater
15 function (RF).
8. Transmission system in accordance with Claim 6, characterized in that a network management function is provided in the transmission system or assigned to it for configuring the
20 centralized and decentralized transmission facilities (UEZ, UED).

Abstract

Method for operating a transmission system and a transmission system in a power supply network.

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At least one centralized transmission facility (UEZ) is connected via the power supply lines of the power supply network to the decentralized transmission facilities (UED) with a decentralized repeater function (RF) being appropriately positioned in the power supply network (EVN) in the event of there being insufficient transmission range of the centralized to the decentralized transmission facilities (UEZ, UED). According to the invention, part of the decentralized transmission facilities (UED) are additionally fitted with repeater functions (RF) in such a way that they can be configured via the centralized transmission facility (UEZ) as a decentralized transmission facility (UED) and/or as a decentralized transmission facility (UED/RF) with a repeater function (RF). In this way, if centralized transmission facilities (UED) cannot be reached, an alternative path is determined and the transmission system is automatically reconfigured.

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Fig. 2

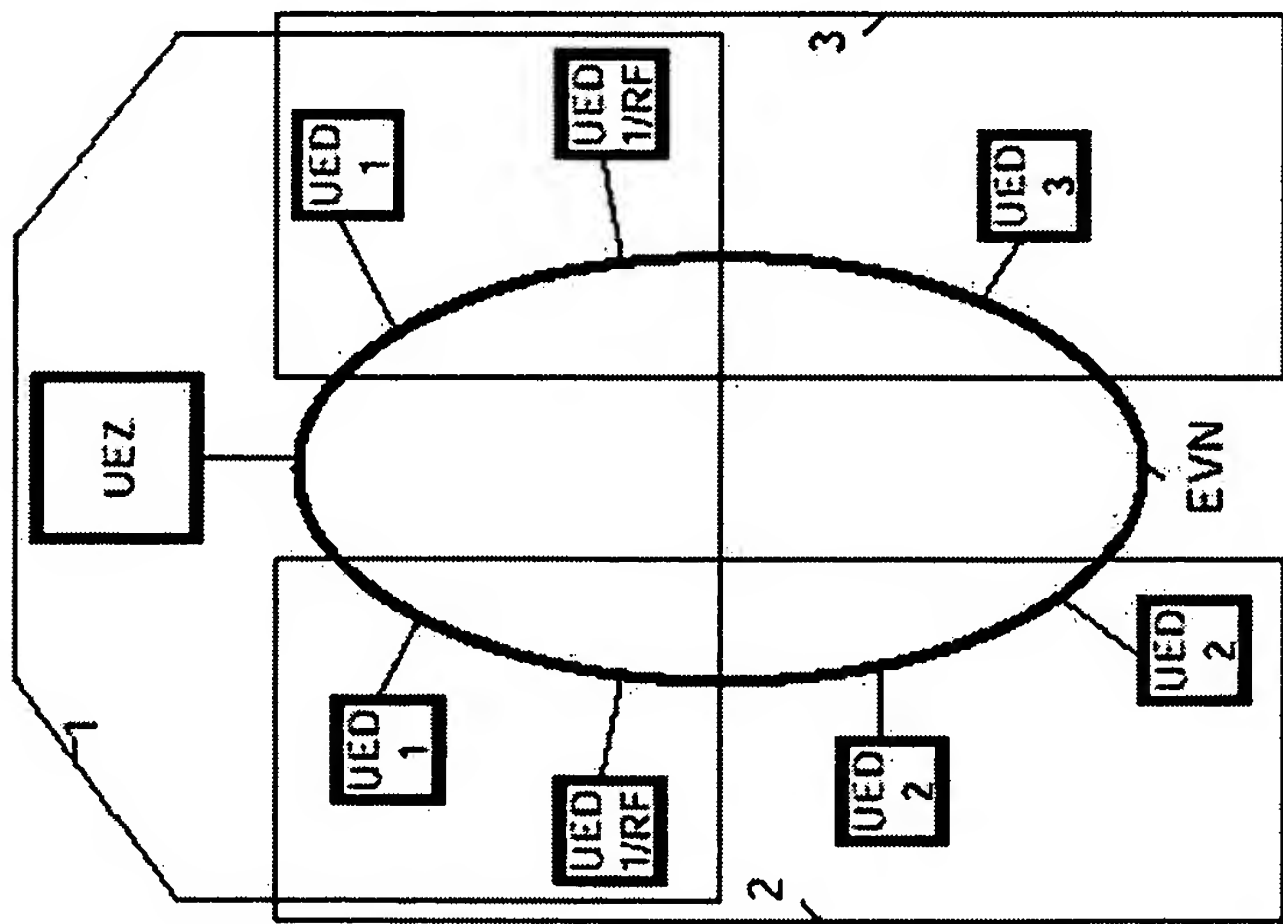


Fig.1

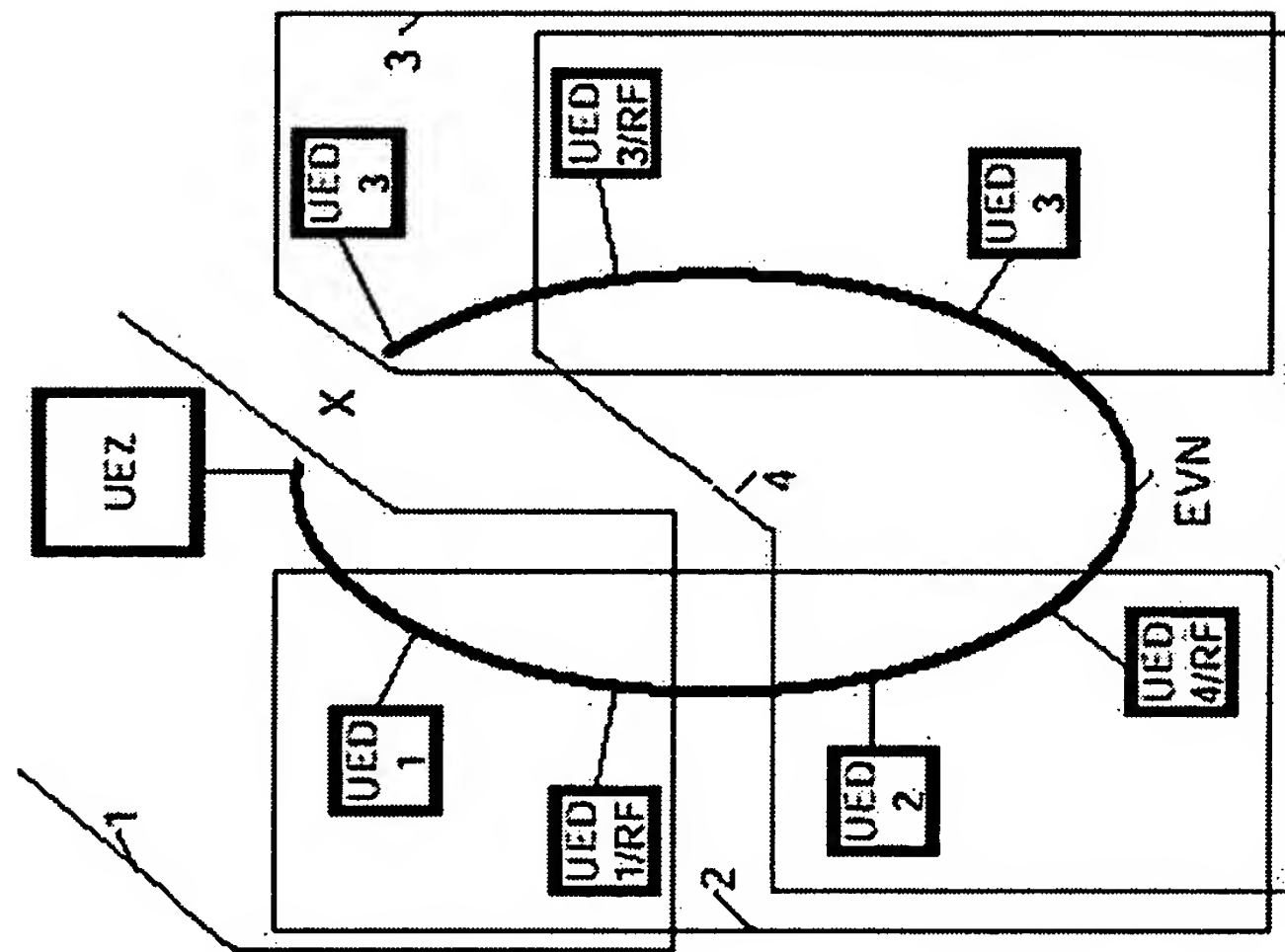


Fig.2

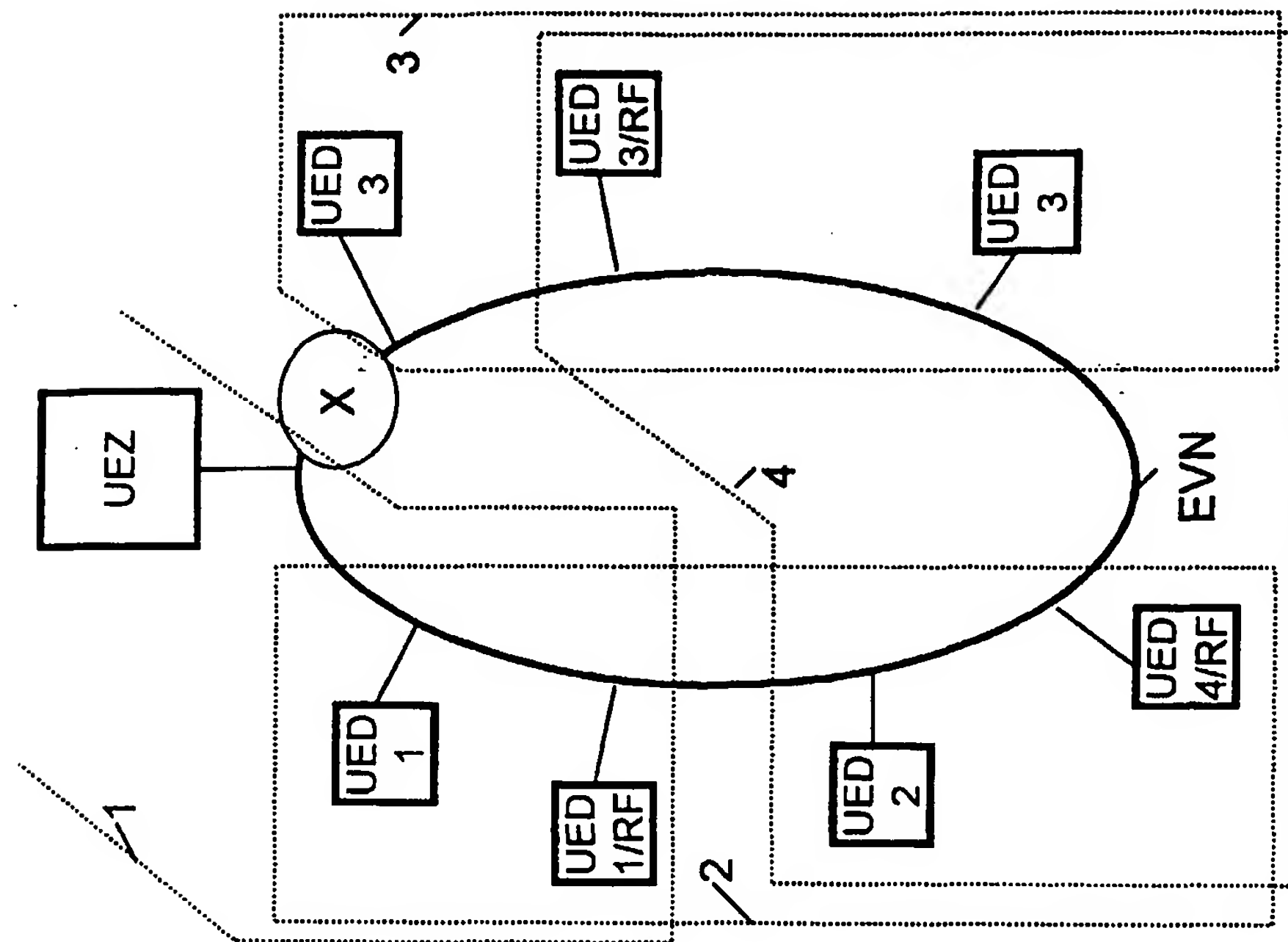


Fig. 1

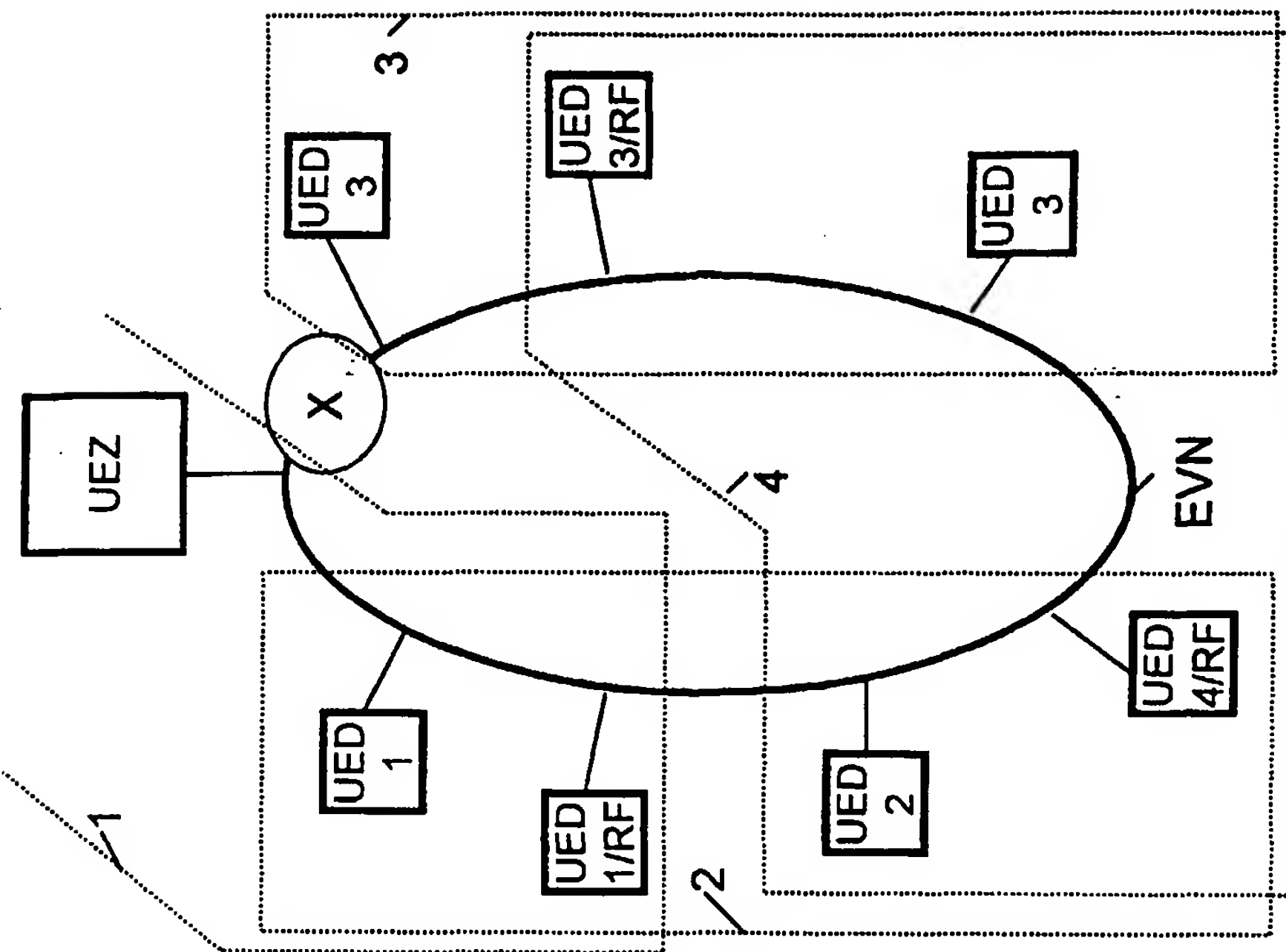


Fig. 2